

MACHIINE LEARNING

Least square error (a option)

The linear regression is sensitive to outliers (a option)

Negative (b option)

Correlation (b option)

Low bias and high variance (c option)

Predictive model (b option)

Regularization (d option)

SMOTE (d option)

Sensitivity and specificity (c option)

False (b option)

Apply PCA to project high dimensional data (b option)

MULTIPLE SELECT QUESTIONS:

11) We don't have to choose learning rate and,

It becomes slow when number of features are very large (a and b option)

QUESTION ANSWERS :

1) Regularization refers to a technique in which we overcome the problem of overfitting/underfitting of model by linear regression. Regularization means to generalise and panelize the model so that it gives the best fitted , correct result. It is of two types .

In simple linear regression model , let us say y is the predicted result and has a direct relation as $y=mx+c$, where the generalised form is ,

$Y=c_0+c_1x_1+c_2x_2+c_3x_3+c_4x_4.....$ where c_1,c_2,c_3 are the weights and c_0 is the bias. Bias is also called loss function (RRS), the residual sum of squares where the bias is a mathematical expression , which we assign, so that model learns by keeping in mind the loss function . It will accordingly adjust the weights and give the best result which is correct .

2) > Lasso regularization : It adds penalty to the error function . Penalty is the sum of absolute values of weights . The loss function only considers the absolute coefficients only. In this RSS is modified by adding the penalty equivalent to the sum of absolute value of coefficient.

> Ridge regularization : It also adds penalty to the error function , but penalty is the sum of squares of the weights. The coefficients are estimated using modified loss function, which is again a mathematical term that govern the working of model. There exists a parameter where the value of that parameter could be any value between 0 to infinity , the ridge regression coefficient will be between 0 to 1 .

This technique discourages learning of a more complex model.

3) The error term is basically the difference between the predicted value and the actual real value of that quantity , this error term is calculated and model accordingly learns and changes the next predicted value , again the value is predicted and process is repeated , this is how training is done in an model. This error term is very important and is used in calculating the R squared value , this value is nothing but the value that gives the user the idea how much good the model is . A good

value of R squared means good model to rely on! It signifies the variance in the model.

THANK YOU